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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/662,063

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Maher Amer

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20575 7590 05/03/2007  
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EXAMINER

HALIYUR, VENKATESH N

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/662,063

Applicant(s)

AMER, MAHER

Examiner

Venkatesh Haliyur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-25 are pending in the application.

#### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. It is not clear from the drawings (Figs 1-5) the features that represents the first, second, third, fourth multiplier modules and first, second, third and fourth multiplicand generators and how the image of corresponding outputs from these multiple modules and generators are applied to each other modules and how these multiple outputs are connected to the FFT/IFFT system (FFT/IFFT processor or DSP is not shown in the drawings) as recited in claims 1,10,16. Therefore, these features must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

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changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-25 are rejected under 35 U.S.C. 101 as the claimed invention is directed to non-statutory subject matter because;

Regarding claims 1,10,16: in claims 1,16, the preamble is recited as "A system for performing Fast Fourier Transform (FFT)/Inverse Fast Fourier Transform (IFFT) operations, the system comprising:" and in claim 10 the preamble is recited as "A system for performing an N-point FFT/IFFT operation, where N is the number of the input samples, the system comprising:"

The preamble of these claims refers to system claims while the body of the claims is directed towards mathematical algorithm that do nothing more than mathematical operations by manipulating numbers involving such operations like

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multiplying with a multiplicand and generating new multiplicands as outputs to another mathematical operation with out any physical transformation or a practical application and hence claims 1,10,16 fail to meet 101 interim guidelines set forth therein (please refer to pages 58-59 of the 101 interim guidelines).

Thus, claims 1-25 are non-statutory since the patent protection sought by the claimed invention is for a mathematical algorithm in the abstract.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-9: Claim 1 recite the phrase(s) "fourth multiplicand generator for providing a fourth multiplicand to said third multiplier module, said fourth multiplicand being applied to said output of said first multiplier module by said third multiplier module to generate said first output of said third multiplier module, an image of said fourth multiplicand being applied to said output of said first multiplier module by said third multiplier module to generate said second output of said third multiplier module a map module for receiving outputs of said multiplier modules and for selecting and applying multiplication factors to selected outputs of said multiplier modules, said map module

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having multiple outputs; and an accumulation module for receiving each of said multiple outputs of said map module, said accumulation module performing an accumulation task for each of said multiple outputs of said map module.” However, it is not clear from these limitations what are the valid multiple outputs received and results of the “map module” as input(s) to the accumulation module and the valid output (s) of the computation performed in the “accumulation module” in the FFT/IFFT system.

Regarding claims 10-15: Claim 10, recite the phrase(s) “at least two multiplier modules for performing complex multiplications, at least one of said multiplier modules receiving an output of said input module, each of said multiplier modules receiving multiplicands from said at least one multiplicand generator, at least one of said multiplier modules receiving an output of another multiplier module; a map module for receiving outputs of all of said at least two multiplier modules, said map module selecting and applying a multiplication factor to each of said outputs of said at least two multiplier modules, said map module generating multiple outputs; and an accumulation module for receiving and accumulating said multiple outputs of said map module. However, it is not clear from these limitations what are the valid multiple outputs received and results of the “map module” as input(s) to the accumulation module and the valid output (s) of the computation performed in the “accumulation module” in the FFT/IFFT system.

Regarding claims 16-25: Claim 16 recite the phrase(s) “a third multiplicand generator for providing a third multiplicand to said third complex multiplier module, said third multiplicand being applied to said output of said first complex multiplier module by said third complex multiplier module to generate said first output of said third multiplier

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module, an image of said third multiplicand being applied to said output of said first complex multiplier module by said third complex multiplier module to generate said second output of said third complex multiplier module; a map module for receiving said outputs of said complex multiplier modules, said map module generating a plurality of outputs by selecting and applying a second set of multiplication factors to selected outputs of said complex multiplier modules; and an accumulation module for receiving said plurality of outputs from said map module, said accumulation module generating a plurality of outputs by performing an accumulation task for each of said plurality of outputs from said map module.” However, it is not clear from these limitations what are the valid multiple outputs received and results of the “map module” as input(s) to the accumulation module and the valid output (s) of the computation performed in the “accumulation module” in the FFT/IFFT system.

Therefore, the preamble of the claims are directed to a system, however there are no structural means recited in the body of these claims, thus making the claims vague and indefinite. Hence examiner respectfully request appropriate corrections are made to claims 1-25.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications should be directed to the attention to Venkatesh Haliyur whose phone number is 571-272-8616. The examiner can normally be reached on Monday-Friday from 9:00AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's

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supervisor, Wing Chan can be reached @ (571)-272-7493. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (571)-272-2600 or fax to 571-273-8300.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

Venkatesh Haliyur

Patent Examiner

uh 04/30/07



WING CHAN  
SUPERVISORY PATENT EXAMINER